

## WHAT IS CLAIMED IS:

- 1           1. A method for providing comprehensive service translation,  
2 comprising:
  - 3           determining the protocol of a service discovery request received from a  
4 client;
    - 5           translating the protocol of the service discovery request into a service  
6 discovery protocol used by a service registry, the translated service discovery request being  
7 used to discover a service provider of the service requested;
    - 8           detecting incompatibilities between the client and the service provider; and  
9           translating the service provided to the client by the service provider in  
10 response to the detected incompatibilities.
  - 1           2. The method according to Claim 1, wherein translating the protocol includes  
2 selecting one of a plurality of service discovery interfaces that are compatible with the  
3 service registry.
  - 1           3. The method according to Claim 2, wherein the number of service discovery  
2 interfaces is programmable.
  - 1           4. The method according to Claim 1, wherein detecting the incompatibilities  
2 comprises analyzing session descriptions contained within Session Initiation Protocol (SIP)  
3 messages exchanged between the client and the service provider.
  - 1           5. The method according to Claim 4, wherein the session descriptions  
2 transmitted by the client reflect the capabilities of the client.
  - 1           6. The method according to Claim 5, wherein the capabilities of the client  
2 include media session capabilities.
  - 1           7. The method according to Claim 6, wherein the session descriptions  
2 transmitted by the service provider reflect the capabilities of the service provider.

1           8.       The method according to Claim 7, wherein the capabilities of the service  
2 provider include media session capabilities.

1           9.       The method according to Claim 8, wherein translating the service provided  
2 comprises translating media received from the service provider into a format compatible  
3 with the media session capabilities of the client.

1           10.      The method according to Claim 4, wherein translating the service provided  
2 comprises:

3                 modifying the session descriptions received from the client to match the session  
4 descriptions received from the service provider; and  
5                 transmitting the modified session descriptions to the service provider.

1           11.      The method according to Claim 10, wherein translating the service  
2 provided further comprises:

3                 modifying the session descriptions received from the service provider to match the  
4 session descriptions received from the client; and  
5                 transmitting the modified session descriptions to the client.

1           12.      The method according to Claim 4, wherein translating the service provided  
2 comprises:

3                 receiving messages from the service provider using a first transport protocol; and  
4                 transmitting the messages received from the service provider to the client using a  
5 second transport protocol.

1           13.      The method according to Claim 12, wherein translating the service provided  
2 comprises:

3                 receiving messages from the client using the second transport protocol; and  
4                 transmitting the messages received from the client to the service provider using the  
5 first transport protocol.

1           14. A service translation system, comprising:  
2                 a service requestor coupled to the service translation system and adapted to  
3                 submit a service request using a first protocol;  
4                 a service translation proxy coupled to the service requestor and adapted to  
5                 translate the first protocol of the service request into a second protocol; and  
6                 a service provider coupled to the service translation system and adapted to  
7                 provide the service requested, wherein the service translation proxy is further adapted to  
8                 translate the service provided into a format that is compatible with the service requestor.

1           15. The service translation system according to Claim 14, wherein the service  
2                 translation proxy comprises a programmable number of service discovery protocol  
3                 interfaces.

1           16. The service translation system according to Claim 15, further comprising a  
2                 service registry coupled to receive the service request in the second protocol, wherein the  
3                 service request is transmitted by one of the programmable number of service discovery  
4                 protocol interfaces.

1           17. A service translation proxy, comprising:  
2                 means for receiving a service request from a service requestor;  
3                 means for translating the service request from a first protocol to a second  
4                 protocol;  
5                 means for locating a service provider to provide the service requested; and  
6                 means for translating the service provided into a format that is compatible  
7                 with capability information associated with the service requestor.

1           18. The service translation proxy according to Claim 17, further comprising:  
2                 means for receiving the service provided using a first transport protocol;  
3                 and  
4                 means for providing the service provided using a second transport protocol.

1        19. A computer-readable medium having instructions stored thereon which are  
2 executable by a service translation proxy for facilitating network service translations by  
3 performing steps comprising:

4              receiving a service request from a service requestor;  
5              translating the service request from a first protocol to a second protocol;  
6              locating a service provider to provide the service requested; and  
7              translating the service provided into a format that is compatible with  
8 capability information associated with the service requestor.

1        20. The computer-readable medium according to Claim 19, wherein locating a  
2 service provider comprises issuing the translated service request to a service registry.

1        21. The computer-readable medium according to Claim 19, wherein locating a  
2 service provider comprises forwarding the service request to another service translation  
3 proxy located within the network.

1        22. A home network, comprising:  
2              a plurality of home devices adapted to exchange media content in a first  
3 format;  
4              at least one mobile device adapted to exchange media content in a second  
5 format; and  
6              a service translation proxy coupled to the plurality of home devices and the  
7 at least one mobile device, wherein the service translation proxy is adapted to translate the  
8 media exchanged between the plurality of home devices and the at least one mobile device  
9 in response to their respective capabilities.

1        23. The home network according to Claim 22, wherein the service translation  
2 proxy is coupled to the plurality of home devices and the at least one mobile device via a  
3 proximity connection.

1        24. The home network according to Claim 23, wherein the proximity  
2 connection includes a Bluetooth connection.

1           25. A method of exchanging media between a mobile device and a home  
2 device, the method comprising:  
3                 establishing the mobile device and the home device as entities of a wireless  
4 home network;  
5                 evaluating differences in media capabilities between the mobile device and  
6 the home device; and  
7                 translating media exchanged between the mobile device and the home  
8 device in response to the media capability differences between the mobile device and the  
9 home device.

1           26. The method according to Claim 25, wherein evaluating the differences in  
2 media capabilities comprises:  
3                 automatically determining the media format capability of the mobile device using a  
4 service translation proxy; and  
5                 automatically determining the media format capability of the home device using the  
6 service translation proxy.

1           27. The method according to Claim 26, wherein translating the media  
2 comprises:  
3                 translating the media format received from the home device into media  
4 format that is compatible with the media format capability of the mobile device; and  
5                 translating the media format received from the mobile device into media  
6 format that is compatible with the media format capability of the home device.